Université Grenoble Alpes

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Kähler-Einstein metrics with prescribed singularities on a Fano manifold

In the first part of the talk, I will recall some known results of the absolute setting, such as the correspondence between the existence of Kähler-Einstein metrics and the K-stability notion (Yau-Tian-Donaldson conjecture) passing through a variational approach.
Then, I will introduce the notion of Kähler-Einstein metrics with prescribed singularities, focusing mainly on algebraic singularities types, and I will present results of the relative variational approach. In the last part of the talk, I will focus on what happens when the singularities vary, and generalising Tian's α-invariant into a function on the set of singularity types, I will present a first numerical connection between the existence of these singular Kähler-Einstein metrics and the genuine ones (and hence with the K-stability notion).